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NOTES ON GEOGRAPHIC DISTRIBUTION

Mammalia, Rodentia, Cricetidae, *Irenomys tarsalis* (Philippi, 1900): New records for Argentina and filling gaps

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ABSTRACT: Ten new records for the Chilean tree mouse, *Irenomys tarsalis*, are presented from western Argentina. This represents a near 30 % increase in the number of known localities for the species in this country. Nine of them fill a gap of at least 125 km in western Chubut Province, where *I. tarsalis* was previously known for only three records. Additionally, environmental information at an ecoregional and habitat scale is provided.

The Chilean tree mouse *Irenomys tarsalis* (Philippi, 1900) is a large rodent that inhabits the temperate rainforests of southern Chile and adjacent Argentina (Pearson 1983; 1995; Kelt 1993). Considered one of the rarest sigmodontines of the Southern Temperate Rainforests, the phylogenetic relationship of the species is still debated and very little is known of its natural history (Pardiñas *et al.* 2004; D'Elía *et al.* 2006; Kelt *et al.* 2008). Also, limited information is available on its geographical distribution, especially in Argentina where the species appears marginally recorded (Saavedra and Simonetti 2000; Pardiñas *et al.* 2004).

Throughout most of its range, the species inhabits densely forested environments associated to the Valdivian Temperate Rainforest ecoregion (Olson *et al.* 2001), in closed-canopy forests with a high proportion of ground cover by large shrubs and thickets of bamboo (*Chusquea* spp.) (Pearson 1983; Patterson *et al.* 1990). In Argentina, at the eastern edge of its distribution, *I. tarsalis* extends into the ecotone between southern-beech tree forests and Patagonian steppe (Pearson 1983; Pardiñas *et al.* 2004).

Of the 36 localities known for the species in Argentina (Pardiñas *et al.* 2004; Udrizar Sauthier *et al.* 2005), only three are from Chubut province (Futalaufquen Lake, Fontana Lake and La Plata Lake), mostly distributed in heavily forested habitats dominated by southern beech trees of the genus *Nothofagus*.

This contribution presents ten new records for *I. tarsalis*, nine of them from western Chubut Province (Argentina).

Cranial remains were recovered from owl pellets and red fox (*Pseudalopex culpaeus*, Mammalia, Canidae) scats throughout northeastern Chubut Province, and pellets recovered from northeastern Nahuel Huapi Lake (Neuquén Province). Intensive trappings carried out near the locality of Cholila (Chubut Province) have yielded several individuals, and a single complete specimen was found dead in Villa Ayelén, Esquel (Chubut Province).

Identification of *I. tarsalis* specimens was made following Pearson (1995) and by comparison with museum specimens (MLP 11.VI.96.10, MLP 29.IV.99.11), in which the combination of the following characters (including exosomatic, craniomandibular and dental traits) can be considered diagnostic (see also Osgood 1943; Mann 1978; Kelt 1993; Pearson 1995): rat-like in appearance with tail much longer than head and body, rather hairy and distinctly penciled; large eyes; dense greyish-cinnamon rufous dorsal hairs; long braincase with large interparietal; upper incisor with a medial groove in its anterior surface; upper and lower molars with prismatic, deeply dissected angular edges perpendicular to the toothrow (Figure 1).

Specimens were deposited in the collection of the Laboratorio de Investigaciones en Evolución y Biodiversidad (LIEB), Facultad de Ciencias Naturales Sede Esquel, Universidad Nacional de la Patagonia "San Juan Bosco".

New localities (Figure 2), arranged from north to south, are as follows (all from Chubut Province, Argentina, except where noted):

1. Nahuel Huapi (Neuquén Province) (41°02'16.7" S, 71°13'01.5" W; LIEB-M-40E; in unidentified strigiform pellets).

2. Campo Bonansea (42°25'48" S, 71°25'44" W; LIEB-M-41E; in *Tyto alba* pellets).

3. Matadero Cholila (42°30'48" S, 71°25'10" W; LIEB-M-38E; in *Tyto alba* pellets).

4. Estancia Los Murmullos, Cholila (42°31'42" to 42°30'26" S, 71°38'25" to 71°35'06" W; LIEB-M-470; LIEB-M-789; trapped specimens).

5. Laguna Larga (42°53'37.05" S, 71°34'14.5" W; LIEB-M-738; in unidentified strigiform pellets).

6. Main entrance to Parque Nacional Los Alerces (42°58'52" S, 71°34'44" W; LIEB-M-870; in *Pseudalopex culpaeus* scats).

7. Villa Ayelén, Esquel (42°55'20.27" S, 71°21'05.18" W; LIEB-M-782; dead specimen).

8. Presa Futaleufú (playa disyuntores) (43°08'42" S, 71°36'46" W; LIEB-M-35E; in *Tyto alba* pellets).

9. On road between Sierra Colorada and Lago Rosario (43°12.311' S, 71°19.222' W; LIEB-M-43E; in unidentified strigiform pellets).

10. El Palenque, Corcovado (43°37'34.6" S, 71°26'12" W; LIEB-M-717; in unidentified strigiform pellets).

FIGURE 1. Fragmentary skull in ventral (above) and lateral (middle) view and mandible in labial view (below) of a specimen of *Irenomys tarsalis* recovered from Barn Owl (*Tyto alba*) pellets from Campo Bonansea, northwestern Chubut Province, Argentina (LIEB-M-41E). Scale bar represents 10 mm.

The new records presented herein increase the number of localities known for Argentina in *ca.* 30 % (from 37 to 47), while filling a gap of 125 km in the species distribution in central Chubut Province where only one record existed previously (Monjeau *et al.* 1997; Pardiñas *et al.* 2004).

At a broad (ecoregional, *sensu* Olson *et al.* 2001) scale the new localities covered herein are distributed in two different environments: 1) southern beech-tree forests of *Nothofagus pumilio* and *N. antarctica* (localities 4, 5, 6, 9, 10); 2) steppe-forest ecotone, with presence of *Austrocedrus chilensis, Maytenus boaria, Lomatia hirsuta, Berberis* spp., and the exotic species *Rosa rubiginosa,* amongst others (all other localities). These new records are consistent with previous references in which the species is mentioned to inhabit densely forested environments, with closed or partially opened understory, and transitional areas between *Nothofagus* spp. forests and Patagonian steppe (Pearson 1983; Pardiñas *et al.* 2004).

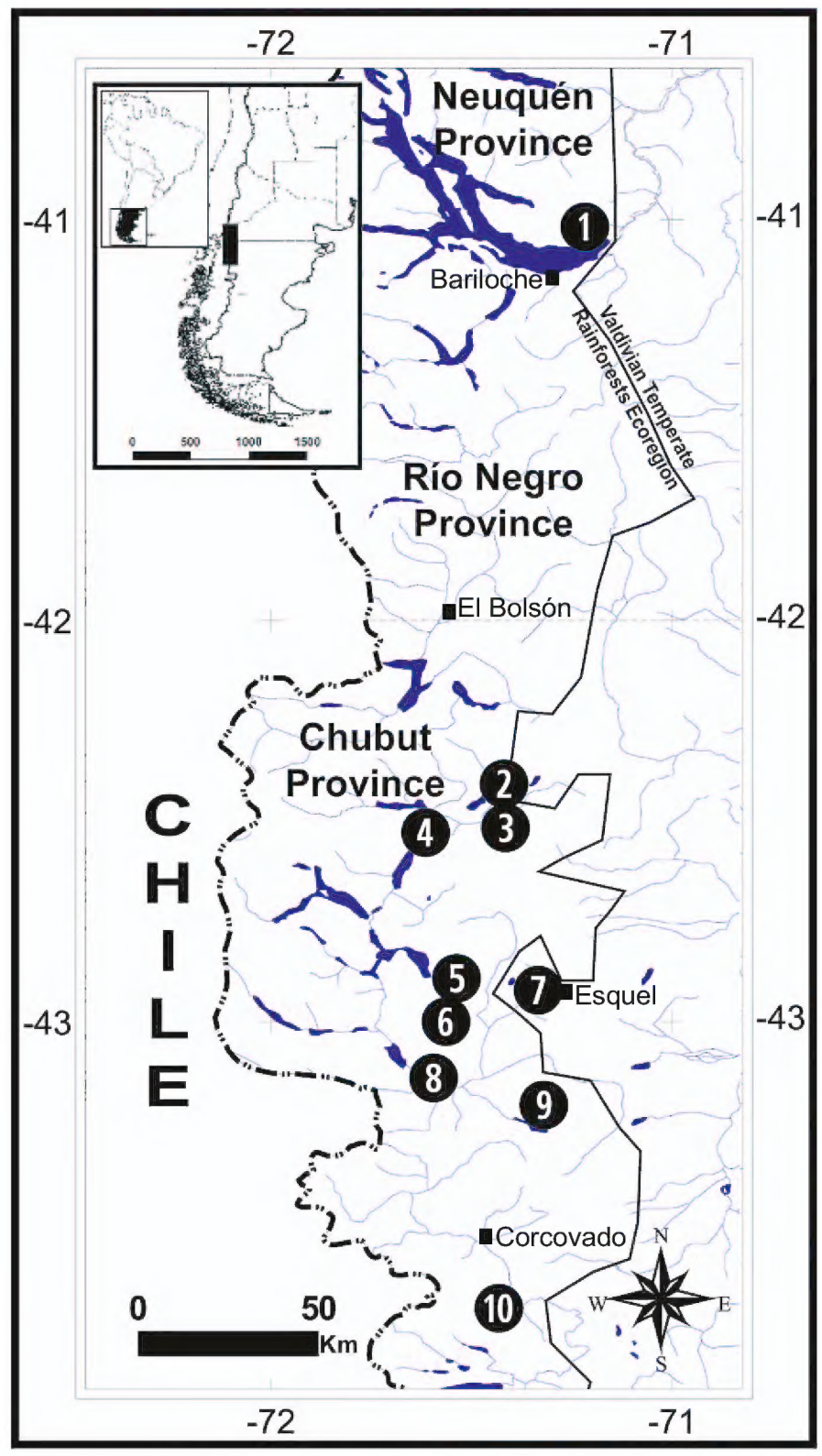

FIGURE 2. Map showing new localities for *Irenomys tarsalis* from western Chubut and Neuquén Provinces, Argentina (see text for number references). Solid line represents the easternmost limit of the Valdivian Temperate Rainforests ecoregion (sensu Olson *et al.* 2001).

At a smaller (habitat) scale, trapped specimens were recorded from two very distinct habitats: 1) *Nothofagus* forests with a moderately-open understory of bamboo (*Chusquea* spp.) at locality 4; and 2) steppe-forest ecotone with scattered trees, both native (*e.g. A. chilensis, M. boaria, N. antarctica*) and exotic (*e.g., Pinus* spp.) and high coverage of exotic and native shrubs (*e.g., R. rubiginosa, Berberis* spp.) outside of Esquel city at locality 7. The first type of habitat can be considered more characteristic of *I. tarsalis* (see Pearson 1983; Kelt 1993), even though in this particular area overgrazing by cattle, logging and occasional fires have modified the environment drastically, leaving stands of bamboo in which specimens were captured. The second type of habitat, in which a dead specimen was found, is clearly different from what has been considered "typical" for the species, especially since no stands of bamboo remain and most of the native vegetation has been affected by human activities (*e.g.,* the area is being cleared for housing).

The data presented herein reinforces the status of *I. tarsalis* as a rare species, at least in Argentina, showing how limited our knowledge remains in aspects as basic as the species' distribution. Further studies should be aimed at finding the species distribution limits, especially its latitudinal range.

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